

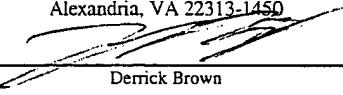
PATENT
5181-83401/P5784DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: Unknown
Filed: Herewith
Confirmation No.: Unknown
Inventor(s):
Davidson

Title: CARBON FOAM HEAT
EXCHANGER FOR
INTEGRATED CIRCUIT

§ Examiner: Unknown
§ Art Unit: Unknown
§ Atty. Dkt. No: 5181-83401

CERTIFICATE OF EXPRESS MAIL UNDER 37 C.F.R. §1.10	
"Express Mail" mailing label number: EV317117593US DATE OF DEPOSIT: June 20, 2003	
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to: Commissioner for Patents Alexandria, VA 22313-1450	
 Derrick Brown	

PRELIMINARY AMENDMENT

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Please amend the above-captioned application as follows:

In the Claims:

Please amend the claims as follows.

The following lists all claims and their status:

Claims 1-13 (cancelled)

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14. (Currently amended): A method of coupling a carbon foam material to an integrated circuit comprising:
 - coating a carbon foam material with first solder; and
 - coupling the carbon foam material coated with first solder to the integrated circuit such that thermal energy from the integrated circuit is transferred to the carbon foam material.
15. (Currently amended): The method of claim 14, further comprising cleaning a surface of the integrated circuit ~~is cleaned~~.
16. (Currently amended): The method of claim 14, further comprising cleaning a surface of the integrated circuit by backspattering the surface of the integrated circuit with an inert gas.
17. (Currently amended): The method of claim 14, further comprising cleaning a surface of the carbon foam material.
18. (Currently amended): The method of claim 14, further comprising cleaning a surface of the carbon foam material by backspattering with an inert gas.
19. (Currently amended): The method of claim 14, further comprising coating a surface of the integrated circuit with a second solder.

Claims 20-21 (Cancelled)

22. (Currently amended): The method of claim 14, wherein a second solder couples the integrated circuit and the carbon foam material, and wherein the second solder comprises copper, nickel, gold, silver, lead, silicon, indium, bismuth, titanium, tin, or mixtures thereof.
23. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises coupling the integrated circuit and the carbon foam material with a universal solder.
24. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises coupling the integrated circuit and the carbon foam material with adhesives.
25. (Currently amended): The method of claim 14, further comprising forming a silicide on a surface of the integrated circuit.
26. (Currently amended): The method of claim 25, further comprising coating a surface of the silicide with an adherent metal.
27. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises heating the carbon foam material with the integrated circuit in an inert atmosphere furnace.

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28. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises heating the carbon foam material with the integrated circuit in a reducing atmosphere furnace.
29. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises heating the carbon foam material with the integrated circuit in a vacuum furnace.
30. (Currently amended): The method of claim 14, wherein coupling the carbon foam material to the integrated circuit comprises heating the carbon foam material with the integrated circuit on a hot plate.

Claim 31 (Cancelled)

32. (New): A method of coupling a carbon foam material to an integrated circuit comprising:
 - applying solder to a surface of a carbon foam material; and
 - coupling the carbon foam material to the integrated circuit such that thermal energy from the integrated circuit is transferred to the carbon foam material, wherein the solder is disposed between the carbon foam material and the integrated circuit, and wherein the solder is applied to the carbon foam material prior to coupling.
33. (New): The method of claim 32, wherein the carbon foam material is disposed within a chamber.
34. (New): The method of claim 33, further comprising coupling conduits coupled to the

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chamber, wherein the conduits are configured to direct a heat exchange fluid into the chamber.

35. (New): The method of claim 32, wherein a depth solder applied to the carbon foam comprises at least two carbon foam ligament diameters into a body of the carbon foam material.
36. (New): The method of claim 32, wherein the solder comprises a reactive braze alloy.

It is believed that no fees are due in connection with the filing of this Preliminary Amendment. However, if any fees are due, the Commissioner is hereby authorized to deduct said fees from Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 50-1505/5181-83401/EBM.

Respectfully submitted,



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Patent Agent for Applicant

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